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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,235	09/19/2003	Taroh Terashi	2271/71043	8483

7590 11/12/2009
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EXAMINER

MCNALLY, DANIEL

ART UNIT	PAPER NUMBER
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1791

MAIL DATE	DELIVERY MODE
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11/12/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/666,235	Applicant(s) TERASHI ET AL.	
	Examiner DANIEL MCNALLY	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 5-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/15/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination

1. The notice of Abandonment mailed 9/26/2007 was sent in error. The notice of abandonment has been withdrawn. This Office action is in response to the amendment filed 5/23/2007.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujioka et al. [US20030006004, of record, previously cited, herein "Fujioka"] in view of Holmes [US20040111913, of record, previously cited].

Fujioka discloses a method of manufacturing an optical disk. The method comprises positioning a part and an adhering target (first and second substrate 1, 2), coating the substrates with a UV curable resin that is used to bond the substrates, wherein the coating is a continuous layer that is considered to cover plural sections between the substrates, and , curing the UV curable resin by UV irradiating the resin over the entire continuous layer which is considered to cover a plurality of sections between the substrates (paragraphs 0018-0022). The method of UV curing the resin causes the optical disk to warp. It is inherent that when the optical disk is warped the substrates comprising the disk are relatively displaced. The method of manufacturing

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the optical disk also comprises measuring the warpage of the optical disk and adjusting the timing of the irradiation to suppress the warpage or “changing” the irradiation of UV energy (paragraph 0042). Adjusting the timing of the irradiation will suppress warpage and inherently offset the stresses in the optical disk. Fujioka adjusts the timing of the irradiation by adjusting the timing of shutters. Adjusting the timing affects the irradiation over the entire substrate surface which includes the selected ones of the plural sections. Fujioka discloses the final optical disk will be bonded with small warpage and high precision; therefore the first and second substrates will be located in their “prescribed positions.” Fujioka discloses adjusting the irradiation time to account for the warpage, not adjusting the energy of the irradiation to account for the warpage.

Holmes discloses a method of UV curing to achieve desired adhesion of the UV curable resin to a substrate and the desired shrinkage of the UV curable resin (paragraph 0003). Like Fujioka, Holmes also uses shutters to selectively control the UV energy. Holmes teaches controlling the radiation exposure by adjusting the exposure time and by adjusting the intensity of the radiation. Holmes establishes that both methods, exposure timing exposure intensity, are effective alternatives for controlling the irradiating process (paragraph 0029).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Fujioka by substituting the method of controlling the irradiating process, by controlling the exposure timing, of Fujioka by adjusting the exposure intensity as taught by Holmes in order adjust the irradiation energy to correct the warpage while maintaining a constant processing time.

With regard to claim 2, it is inherent that by adjusting the irradiation energy to reduce the warpage, the change in irradiation energy will change the direction of the stresses in the optical disk. Fujioka discloses controlling the direction and amount of warpage (paragraph 0027).

With regard to claim 3, Fujioka discloses a warpage detector and a feedback mechanism (paragraphs 0027 and 0038). Fujioka as modified by Holmes adjusts the irradiation intensity to control the warpage in the optical disk.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takemoto et al. [US6000784, newly cited, herein "Takemoto"] in view of Hamada [JP11-291539A, newly cited, machine translation provided].

Takemoto discloses a method of adhering parts with light energy curable adhesive. The method comprises positioning a part (head 11) and an adhering target (head holder 14) at a prescribed relative position (as shown for example in Figures 14-17), coating plural sections between the parts and adhering target with a UV light curable adhesive, irradiating UV light energy at the plural sections of adhesive, generating curing shrinking forces in the light curable adhesive at the plural sections, and adhering the part to the adhering target while maintaining the part and target at the prescribed positions (columns 6, 7-8, 10, and for example embodiments 11-14).

Takemoto disclose the part and the adhering part may deviate during the bonding (embodiment 13). Takemoto discloses in the 3rd and 12th embodiment that a CPU controls the irradiation of the UV light energy and that the shrinkage in the sections of adhesive caused by the UV energy can offset each other, but is silent as to changing

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the irradiation energy when a relative displacement takes place between the part and the adhering target.

Hamada discloses a method of joining a part and an adhering target by a UV curable adhesive. The method comprises placing plural sections of UV curable adhesive between an image exposure means (12) and an optical base (120), curing the adhesive with UV energy from curing units (300A, 300B). Hamada discloses the image exposure means (12) and an optical base (120) may shift during the UV curing, in which case the exposure balance of the curing units can be changed in order to correct the positioning of the parts (paragraphs 0050-0053). Hamada teaches relative displacement between the parts being bonded can be adjusted by changing the irradiation energy at the plural sections of adhesive.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method of Takemoto by changing the irradiating energy of the UV energy to correct relative displacement between the part and adhering part as taught by Hamada in order to ensure the part and adhering part are bonded in an accurate position.

With regard to claim 2, Hamada discloses changing the balance of the UV curing energy to change the direction of the relative movement between the parts.

With regard to claim 3, Hamada discloses detecting lateral displacement of the part from the adhering target during the curing, feeding back a result, and changing the balance of the UV curing units which changes the curing shrinkage force so that the

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relative position between the part and adhering part can be adjusted (paragraphs 0050-0053).

With regard to claim 4, applicant is referred to the discussion above with respect to Takemoto as modified. Furthermore, Takemoto and Hamada teach selectively irradiating the UV energy to the plural sections of adhesive. Takemoto discloses the shrinking forces are adjusted so that the amount and direction of the stresses can be offset or cancelled out (3rd embodiment).

Response to Arguments

5. Applicant's arguments filed 5/23/2007 have been fully considered but they are not persuasive. Applicant argues with respect to claims 1-3 that Fujioka and Holmes does not teach or suggest selectively irradiating a particular area to control the shrinkage of adhesive. Claim 1 does not require "selectively irradiating a particular area to control the shrinkage of adhesive." Claim 1 merely requires irradiating a one or more sections, and changing the irradiation at selected ones of the plural sections. The disks of Fujioka are considered to comprise plural sections that are covered in adhesive. Irradiating over the entire surface will include irradiating over one or more sections, and Holmes teaches changing the irradiation energy. By changing the irradiation energy over the entire surface, the changing will take place at selected ones of the plural sections.

6. Applicant's arguments with respect to claim 1-4 have been considered but are moot in view of the new ground(s) of rejection.

Newly cited Takemoto and Hamada disclose all of the limitations of claims 1-4. Claim 4 was previously indicated allowable because of the limitation of selectively irradiating the light energy to the curable adhesive. However newly cited Takemoto and Hamada both disclose using selective irradiating to cure the plural sections of adhesive.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL MCNALLY whose telephone number is (571)272-2685. The examiner can normally be reached on Monday - Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel McNally/
Examiner, Art Unit 1791

/John L. Goff/
Primary Examiner, Art Unit 1791

DPM
October 14, 2009